tional PC-screens using the mouse cursor. In order to be able to achieve such a slide or slide controller in association with the haptically perceptible acknowledgement that is provided according to the invention, the means are actuated in such a way that a surface area in the form of a slide- or controller-type control element that has to be moved along a straight line can be actuated, in particular a haptically perceptible limit being created all round as a result of mechanical deformation by appropriately actuating the means during the movement, in the direction of the movement at least. The user thus moves a haptically perceptible "mountain" achieved by corresponding deformation of the deformable layer, he thus feels a certain resistance as the above "mountain" vibrates slightly if there is a movement or adjustment of the slide that is thus created, leading to the generation of a signal. When touched directly with the finger, the limit that is preferably provided all round further offers sufficient perception of the shape for the finger to be virtually guided. If an activating pen is used, the pen virtually rests in the groove created by the deformation, such that it is likewise gently guided and can be moved easily along the straight lines.

BRIEF DESCRIPTION OF THE DRAWINGS

[**0016**] Further advantages, features and details of the invention will emerge from the embodiment described below and from the drawings in which:

[**0017**] **FIG. 1** shows a sketch illustrating the principle of a touch-sensitive screen according to the invention, seen in a partial view in cross section,

[**0018**] **FIG. 2** shows a view according to **FIG. 1** with an actuated piezoelectric layer for the three-dimensional development of a control element and for the creation of a second haptic signal indicating the activation thereof,

[**0019**] **FIG. 3** shows the view from **FIG. 2** when inputting a command via a user interface and actuating the piezoelectric layer to create the haptically perceptible signal acknowledging the generation of the command signal.

[**0020**] **FIG. 4** shows an exploded view of a screen according to the invention, showing a slide- or controller-type control element and

[**0021**] **FIG. 5** shows two screen views together with details of the frequency of the haptically perceptible signal during a continuous parameter adjustment.

DETAILED DECSRIPTION OF INVENTION

[**0022**] **FIG. 1** shows a touch-sensitive screen **1** according to the invention in the form of a sketch illustrating the principle involved, the essential elements only being shown here. The screen in the embodiment shown comprises an LCD or liquid crystal display plane **2**, consisting of a plurality of individual liquid crystal cells that are not shown in further detail, consisting of two upper and lower covering layers **3**, the distance between which is generally lower than 10 μm. Each covering layer consists firstly of a glass plate, on the inner side of which transparent electrodes having a special orientation layer are applied. A polyimide layer is generally used as an orientation layer. An ITO (indium-doped tin oxide) layer is preferably used as a transparent electrode material. Between the covering layers **3** is the liquid crystal layer **4**. The information content that can be displayed in a liquid crystal display is determined by the structuring of the transparent electrodes, which are manufactured primarily in an arrangement that can be shown diagrammatically. The design of such a liquid crystal display is actually known and therefore does not need to be disclosed in further detail.

[**0023**] On the upper side of the liquid crystal display **2**, an electrically actuatable means **5** is applied in the form of a piezoelectric layer **6** that comprises a plurality of individually actuatable layer sections **7**. Each layer section **7** can be actuated by an appropriate electrode matrix that is not shown in more detail. After the layer **6** has been disposed above the liquid crystal display **2**, said layer and likewise the electrode matrix have to be transparent, so that it is possible for the information shown on the liquid crystal display **2** to be recognized.

[**0024**] On the upper surface of the piezoelectric layer **6** the touch-sensitive surface **8** is applied, consisting of a touch-sensitive, usually capacitative matrix, which when touched and when mechanical deformation occurs, generates an electric signal at the site of deformation, which signal can be detected and which represents in electrical form the command signal that has been input by the user. Both the mode of functioning and likewise the design of such a touch-sensitive user interface are known so that there is no need to go into this in further detail.

[**0025**] The central element is the electrically actuatable means **5** in the form of the piezoelectric layer **6** that is described here. Any piezoelectric material that allows the creation of a sealed layer covering a wide area can be used to create the piezoelectric layer **6**. Piezoelectric materials on a ceramic basis that can be manufactured in a polycrystalline form, such as for example, mixed $Pb(Zr—Ti)O_3$ crystals (so-called PZT-ceramics) and the like can be mentioned in particular. Piezoelectric polymers such as polyvinylidenedifluoride (PVDF) for example can likewise be used. This list is not conclusive, but merely serves as an example. The mode of functioning of said piezoelectric layer **6** is shown in **FIGS. 2 and 3**.

[**0026**] Assigned to the screen **1** is a control device **9**, for the control thereof, which firstly controls an image shown via the liquid crystal display **2**, and which further communicates with the piezoelectric layer **6** and with the user interface **8**.

[**0027**] Proceeding from the image shown via the liquid crystal display **2**, it is possible by means of corresponding actuation of the piezoelectric layer to display three-dimensionally, by means of the piezoelectric layer **6**, a control element, for example, which is only displayed optically by the liquid crystal display **2** in the area A that is shown with a dotted line in **FIG. 2**, that is, it is possible to display said control element externally in a manner that can be felt by touch. For this purpose, via the actuating electrode matrix that is not shown in further detail, a plurality of local layer sections **7**, which are arranged above the region A of the liquid crystal display A in which the control element is shown optically, are actuated such that they change their shape and as a result thereof a local increase can be achieved in said area, as is shown in **FIG. 2**. After the user interface **8**, which is sufficiently flexible, has been directly connected to the piezoelectric layer **6** said layer is also deformed such that a slight convexity can be felt corresponding with the position of the control element that is shown.